UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,131	10/28/2003	Kang-Bok Lee	3364P100	5527

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EXAMINER
AGA, SORI A

ART UNIT	PAPER NUMBER
2619	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/696,131	LEE ET AL.
	Examiner	Art Unit	
	Sori A. Aga	2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 September 2007*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-12* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 4-12* is/are rejected.

7)☒ Claim(s) *1* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/ are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Claim Objections

1.   Claim1 is objected to because of the following informalities: The language used in the

third line of step (C) does not clearly indicate how the subsequent limitations further define the

recited selection algorithm. Appropriate correction is required.

Response to Amendment

1.   Applicant's amendments and accompanying remarks, filed on 07/19/2007 have been

entered and have been carefully considered. Claims 1 and 4 are amended. Claim 3 is cancelled.

Claims 1,2 and 4-12 are now pending.

2.   In light of the amendment to claim 4, the 35 U.S.C 112 second paragraph rejection of

claim 4 is withdrawn.

Claim Rejections - 35 USC § 103

a.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
such that the subject matter as a whole would have been obvious at the time the invention was made to a person
having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
manner in which the invention was made.

1.   Claim 8 -11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kalman et al.

(US 6,680,912) in view of Kao et al (US 7,212,490) (herein after "Kao") and Walrand et al. (US

6,711,125) (herein after Walrand).

Claim 8:

Kalman teaches during normal operations i.e. all spans operational and undegraded

(neither ring is wrapped), data flows on the ring with lowest cost path [column 3 lines1-

3].

Kalman also teaches computing cost (transmission coefficient) for direction 0 and

direction 1 (each ring) based on various factors including hop count [column 7 line 66-

column 8 line 5].

Kalman also teaches selecting a preferred direction (ring) with the lowest cost

(transmission coefficient) [column 7 lines 51-53].

However, Kalman does not explicitly teach transmission coefficient based on usage rate

and/or delay time.

However, Walrand in the same field of endeavor teaches including transmission rate

(usage rate) as a factor in determining preferable path (column 6 lines 46-50). Therefore,

it would have been obvious at the time of the invention to include transmission rate

(usage rate) in the cost computation of Kalman in order to meet quality of service

guarantees.

However, Kalman does not explicitly teach transmission coefficient based on delay time.

However, Kao in the same field of endeavor teaches using a latency metric (delay time)

for a given node for each ring. (Column 9 lines 46-52 and column 3 lines 12-13) to determine a preferred path. Therefore, It would have been obvious at the time of the invention to include latency (delay time) in the cost computation of Kalman in order to meet quality of service guarantees (column 2 lines 22-27).

Claim 9:

However, Kalman does not explicitly teach hop number and usage rate are determined with reference to a routing table. However, Kao in the same field of endeavor teaches hop count is included in each table of each node [column 10 line 22-29]. Kao also teaches shortest path determination is made based on this table [column 9 line 47]. Therefore, it would have been obvious at the time of the invention to determine hop count and said usage rate based on data stored in a routing table in each node in order to have quick access to the information needed to make said ring selection.

Claim 10:

Kalman also teaches all nodes independently store current topology of the ring [column 14 lines 63-65]. However, Kalman does not explicitly teach the topology map includes hop number, port information, MAC address and wrapped or not information.

However, Kao, in the same field of endeavor teaches a topology table including MAC addresses and hop count [column 10 line 22-29 - see also figure 5].

However, Cisco in the same field of endeavor teaches maintaining a topology map of the ring at every node including, MAC addresses, hop counts and wrapped or not information

[see highlighted sections of pages 5 and 6]. Therefore, it would have been obvious at the

time of the invention to make Kalman's table include information on MAC address,

wrapped or not information and inter-node hop numbers in order to be used in making

routing decisions.

Kalman also teaches a preferred direction is included with in table 1 (topology table)

[column 7 line 65]. The preferred direction entry (0 or 1) is considered to be port

information because each node is connected to adjacent nodes by ring interface cards

(ports) and each node (interface card) corresponds to each direction (0 or 1) [column 12

lines 52-53 – see also figure 6].

Claim 11:

Kalman also teaches each node determines (calculates) lowest cost path (transmission

coefficient) for each of the nodes [column 3 line 7]. Kalman also teaches updating

(storing) the calculated transmission coefficient in a preferred direction table – see table 1

(routing table) [colum8 line 46-47]. Kalman also teaches selecting a ring having a lowest

transmission coefficient as discussed regarding claim 8 above.

Claim 12:

Kalman teaches calculating transmission coefficient and update routing table as discussed

above regarding claim 8. However, Kalman does not explicitly teach updating is done

periodically. However, Kao in the same field of endeavor teaches calculating and

updating latency metric (transmission coefficient) periodically [column 10 lines 40-41

and column 5 line 23 - see also fig.5]. Therefore, it would have been obvious at the time

of the invention to calculate usage rate and transmission coefficient periodically and

update routing table accordingly in order to have updated information to be used in the

ring selection process.

2.   Claims 1,2 and 4-7 rejected under 35 U.S.C. 103(a) as being unpatentable over Kalman et

al. (US 6,680,912); Kao et al (US 7,212,490) (herein after "Kao") and Walrand et al. (US

6,711,125) (herein after Walrand) as applied to claim 8 above and further in view of Applicant's

own admission (herein after Admission).

Regarding Claim 1:

(Regarding claim 1- b, c and d), Kalman, Kao and Walrand together teach all the

limitations of (b, c and d) as discussed above regarding claim 8 except comparing the

usage rate and hop number of the selected path with reference values based a ring

selection algorithm. However Kalman does not explicitly teach comparing the usage rate

and hop number of the selected path with reference values based a ring selection

algorithm.

However, Kao teaches comparing the ring selected based on shortest path (fewest hops)

selection with ring selected using dynamic ring selection based on latency matrices

indicative of congestion (ring selected based on transmission coefficient) [column 3 lines

53-54; column 3 lines 57-60; and column 3 lines 17-20]. It is inherent that comparing the

references is done in order to determine which ring has more congestion. Therefore, it

would have been obvious at the time of the invention to compare usage rate and hop

number with reference values of the ring selected with the dynamic ring selection in order

to avoid creating more congestion by selecting a ring with an already high congestion.

(Regarding 1(a)) However, Kalman does not explicitly teach transmitting reception node

address request message. However, Admission teaches that the transmission node (420)

broadcasts (to all nodes) an ARP Request (reception node address request message) (step

S401-figure 4). Admission also shows the routing table is updated with information

regarding the shortest path. (Figure 4). Therefore it would have been obvious at the time

of the invention to broadcast an ARP request in order to create and update topology table

for each node.

Claim 2:

All the limitations of claim 2 are considered to be substantially the same as claim 9.

Claim 4:

However, Kalman does not explicitly teach determining if the two selected rings have the

same reference value. However, Kao teaches using direction references [column 10 lines

56-57 - see also fig. 5]. Kao also teaches comparing the two selected rings as discussed

regarding claim 8. Therefore, it would have been obvious at the time of the invention to

compare the reference values in order to determine the path with the shortest path while

avoiding overloading the same path.

Claim 5:

All the limitations of claim 1 are included in claim 5. The references teach all the

limitations of claim 1 as discussed above regarding claim 1.

Kalman, Warland and Kao together teach cost (transmission coefficient) determined with

reference to hop count, usage rate and latency (delay time) as discussed regarding claim 8

above.

Claim 6:

All the limitations of claim 1 are included in claim 6. The references teach all the

limitations of claim 1 as discussed above regarding claim 1. However, Kalman does not

explicitly teach updating is done periodically. However, Kao in the same field of

endeavor teaches calculating and updating latency metric (transmission coefficient)

periodically [column 10 lines 40-41 and column 5 line 23 - see also fig.5]. Therefore, it

would have been obvious at the time of the invention to calculate usage rate and

transmission coefficient periodically and update routing table accordingly in order to

have updated information to be used in the ring selection process.

Claim 7:

All the limitations of claim 1 are included in claim 7. The references teach all the

limitations of claim 1 as discussed above regarding claim 1. Kalman also teaches when a

link failure is detected (wrapped path) the other ring is selected [column 3 lines 26-28].

Response to Arguments

3.   Applicant's arguments with respect to claim 1 have been considered but are moot in view

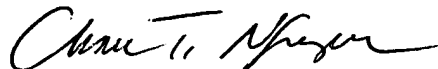of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Sori A. Aga whose telephone number is (571) 270-1868. The

examiner can normally be reached on M-Th 7:30-5:00,   F 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Chau T. Nguyen can be reached on (571) 272-3126. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

S.A.

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